

**VARIABLE FLOW REGULATOR
FOR USE WITH GAS TREATMENT DEVICES**

ABSTRACT OF THE DISCLOSURE

A gas treatment system comprises a variable flow regulator assembly placed in operable and fluid communication with a shell of a gas treatment device. The variable flow regulator assembly comprises two or more conduit portions comprising a first portion and a second portion, wherein the second portion has a coefficient of thermal expansion greater than a first coefficient of thermal expansion of the first portion. The variable flow regulator assembly structurally changes shape to alter the flow maldistribution of an exhaust gas stream into the gas treatment device when light off is achieved.

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